

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
CONNECTICUT / RHODE ISLAND**

COVER CROP

(acre)

CODE 340

DEFINITION

Grasses, legumes, forbs, or other herbaceous plants established for seasonal cover and conservation purposes.

PURPOSES

- ◆ Reduce erosion from wind and water
- ◆ Increase soil organic matter
- ◆ Manage excess nutrients in the soil profile
- ◆ Promote biological nitrogen fixation
- ◆ Increase biodiversity
- ◆ Weed suppression
- ◆ Provide supplemental forage
- ◆ Soil moisture management

CONDITIONS WHERE PRACTICE APPLIES

On all lands requiring vegetative cover for natural resource protection

CRITERIA

General Criteria Applicable To All Purposes

Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods shall be consistent with Table 1 or as approved by the State Resource Conservationist.

The species selected will be compatible with the nutrient management and pest management provisions of the overall

conservation plan.

Federally recognized noxious weeds or state recognized non-native (exotic, non-indigenous), invasive species will not be used.

Terminate cover crops in preparation for successive crops by harvest, frost, mowing, tillage, and/or herbicides.

Herbicides used with cover crops will be compatible with the successive crop.

Cover crop residue will not be burned.

Additional Criteria to Reduce Erosion From Wind and Water

Cover crop establishment, in conjunction with other practices, will be timed so that the soil will be adequately protected during the critical erosion period(s).

Plants selected for cover crops will have the physical characteristics necessary to provide adequate protection.

The amount of surface and/or canopy cover needed from the cover crop shall be determined using current erosion prediction technology.

Additional Criteria to Increase Soil Organic Matter

Cover crop species will be selected on the basis of producing high volumes of organic material to maintain or improve soil organic matter.

The NRCS Soil Conditioning Index (SCI) procedure will be used to determine the

amount of biomass required.

The cover crop will be terminated as late as feasible to maximize plant biomass and still prepare the seedbed for the subsequent crop.

Additional Criteria to Manage Excess Nutrients in the Soil Profile

Cover crops will be established and actively growing before expected periods of high precipitation that can cause leaching.

Cover crop species will be selected for their ability to absorb large amounts of nutrients from the rooting profile of the soil.

The aboveground biomass will be removed from the field for maximum nutrient removal efficiency.

Additional Criteria to Promote Biological Nitrogen Fixation

The specific Rhizobia bacteria will either be present in the soil or the seed will be inoculated at the time of planting legumes.

Nitrogen credits from legume cover crops will be accounted for in the nutrient management plan.

Additional Criteria to Increase Biodiversity

Cover crop species shall be selected that have a variety of maturity dates, attract beneficial insects, serve as a trap crop for damaging insects, and/or provide food and cover for wildlife habitat management.

Additional Criteria for Weed Suppression

Species for the cover crop will be selected for their chemical or physical competition with weeds.

Cover crops residues will be left on the soil surface to maximize allelopathic (chemical) and mulching (physical) effects.

For long-term weed suppression, perennials and/or biennial species can be used.

Additional Criteria to Provide Supplemental Forage

Species selected will have desired forage traits, be palatable to livestock, and not interfere with the production of the subsequent crop.

Forage provided by the cover crop may be hayed or grazed as long as sufficient biomass is left for resource protection.

Additional Criteria for Soil Moisture Management

Terminate growth of the cover crop sufficiently early to conserve soil moisture for the subsequent crop.

Cover crops established for moisture conservation shall be left on the soil surface until the subsequent crop is planted.

In areas of potential excess soil moisture, allow the cover crop to grow as long as possible to optimize soil moisture removal.

CONSIDERATIONS

Terminate the cover crop as late as feasible to maximize plant growth and still prepare the seedbed for the successive crop.

Deep-rooted species provide maximum nutrient recovery.

Consider that grasses utilize more soil nitrogen, and legumes utilize both nitrogen and phosphorus.

Avoid cover crop species that attract potentially damaging insects.

Acceptable benefits, for most purposes, are usually accomplished when the plant density is at least 25 stems per square foot, the combined canopy and surface cover is at least 60 percent, and the above ground (dry weight) biomass production is at least 2700 lbs./acre.

Cover crops may be used to improve site conditions for establishment of perennial species.

PLANS AND SPECIFICATIONS

Plans and specifications will be prepared for the practice site. The State standard will specify practice requirements for site specifications. Specifications will include, but are not limited to, recommended species, seeding rates and dates, establishment methods, nutrients needed, and other establishment information. Specifications can be recorded in narrative format, on job sheets, or forms designed to provide specific requirements for the practice.

SEEDING METHODS

When conditions warrant seedbed preparation, conduct minimum soil disturbance during and after seeding to reduce potential soil erosion yet ensure adequate contact for seed germination.

Direct seeding after crop harvest may be accomplished by use of no tillage drills.

Broadcasting during or after crop harvest may be done by use of hand operated cyclone seeder, aerial equipment, or tractor mounted seeder without seedbed preparation if adequate moisture is present.

When moisture is lacking, consider broadcasting seed during crop harvesting operations followed by light tillage to provide better soil-seed contact from equipment usage.

When applying seed aurally prior to crop harvest, increase rates per acre by 50% and seed within 30 days of harvest to prevent poor

stand vigor and damage of the cover by harvesting equipment.

SOIL AMENDMENTS

When using manure, either incorporate prior to seeding, or apply after the crop is well established and at a rate light enough to prevent smothering

PLANT SELECTION

Vegetation most commonly used for seasonal cover is included in Table 1. The crops will be seeded not later than the dates shown to provide adequate cover for the periods indicated.

MANAGEMENT

Encourage conservation tillage techniques that leave a minimum of 30 percent cover of crop residue on the soil surface at the time of seeding the main crop. These techniques include use of no tillage or reduced tillage equipment and/or chemical vegetation control.

OPERATION AND MAINTENANCE

For each field, record the species selected, seeding date(s), rate per acre, method of seeding, soil amendments (if any, including manure applications), date and method of termination, and dates and notes of any observations made of cover, residue, or failure areas.

Control weeds in the cover crop by mowing or herbicide application.

TABLE 1 LATEST SEEDING DATES FOR ESTABLISHING ADEQUATE ANNUAL COVER ON CROPLAND – CONNECTICUT AND RHODE ISLAND				
	SEEDING RATES	PERIOD PROTECTED		
SPECIES	POUNDS / ACRE	WINTER	SUMMER	FALL
ANNUAL RYEGRASS (Lolium multiflorum)	25 – 35	SEPTEMBER 15	MAY 1	JULY 15
SMOOTH BROMEGRASS (Brontus inermis)	10	SEPTEMBER 1	JULY 15	
HAIRY VETCH (Vicia villosa)	30	SEPTEMBER 1		
WHEAT, WINTER (Triticum vulgare)	120	OCTOBER 1		
OATS (Avena sativa)	100	SEPTEMBER 10	MAY 1	
SUDANGRASS (Sorghum vulgare var. sudanense)	35			JUNE 15
BUCKWHEAT (Fagopyrum sagittatum)	50 – 75			JULY 15
GRAIN RYE (Secale cereale)	CONNECTICUT SEE TABLE 1A			
GRAIN RYE (Secale cereale)	RHODE ISLAND SEE TABLE 1B			

TABLE 1A				
LATEST SEEDING DATES FOR ESTABLISHING CEREAL RYE COVER - CONNECTICUT				
		SEEDING RATES / ACRE		“GRAIN” RYE*
LOCATION		POUNDS	BUSHELS	SEEDING DATES
1.	MLRA 144 UPLANDS ABOVE 1,000 FEET ELEVATION AND ANY DEPRESSIONAL F ROST POCKETS	112	2	UP TO SEPTEMBER 15
		140	2.5	SEPTEMBER 16 TO SEPTEMBER 25
2.	MLRA 144 BELOW 1000 FEET ELEVATION AND MORE THAN FIVE MILES INLAND	112	2	UP TO SEPTEMBER 15
		140	2.5	SEPTEMBER 16 TO OCTOBER 1
3.	MLRA 145 AND COASTAL AREAS IN MLRA 144 UP TO FIVE MILES INLAND	112	2	UP TO SEPTEMBER 30
		140	2.5	OCTOBER 1 TO OCTOBER 10
* <u>CONNECTICUT ONLY</u> - USE SEED REFERRED TO IN TRADE AS “CLEAR-TAG” <u>AND</u> THAT MEETS THE REQUIREMENTS OF CONNECTICUT GENERAL STATUTES, CHAPTER 424, SECTION 22-55 THROUGH 22-59 AS AMENDED				

TABLE 1B LATEST SEEDING DATES FOR ESTABLISHING CEREAL RYE COVER – RHODE ISLAND				
		SEEDING RATES / ACRE		“COMMON” RYE
LOCATION		POUNDS	BUSHELS	SEEDING DATES
1.	NORTHERN RHODE ISLAND AND SOUTHERN RHODE ISLAND (NORTH OF AMTRAK RAIL LINE – VILLAGES OF WESTERLY TO EAST GREENWICH)	112	2	UP TO SEPTEMBER 8
		140	2.5	SEPTEMBER 9 TO SEPTEMBER 23
		168	3	SEPTEMBER 24 TO OCTOBER 8
2.	EASTERN RHODE ISLAND AND SOUTHERN RHODE ISLAND (SOUTH OF AMTRAK RAIL LINE – VILLAGES OF WESTERLY TO EAST GREENWICH)	112	2	UP TO SEPTEMBER 23
		140	2.5	SEPTEMBER 24 TO OCTOBER 3
		168	3	OCTOBER 4 TO OCTOBER 13